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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,396	09/26/2003	Daniel V. Santi	300622010900	9173

EXAMINER	
ROBINSON, HOPE A	

ART UNIT	PAPER NUMBER
1652	

MAIL DATE	DELIVERY MODE
10/17/2007	PAPER

7590 10/17/2007
TED APPLE (TOWNSEND AND TOWNSEND AND CREW)
379 LYTTON AVENUE
PALO ALTO, CA 94301

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No. 10/672,396	Applicant(s) SANTI ET AL.	
	Examiner Hope A. Robinson	Art Unit 1652	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Hope A. Robinson. (3) Ted Apple.
 (2) Jon Weber. (4) _____.

Date of Interview: 12 October 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
 c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
 If Yes, brief description: _____.

Claim(s) discussed: 1.

Identification of prior art discussed: _____.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

HOPE ROBINSON ^{10/26/07}
 PRIMARY EXAMINER



Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Apple initiated the interview and submitted the attached draft claims for discussion purposes. Mr. Apple requested the participation of a supervisor. Supervisory Examiner Weber informed Mr. Apple that the proposed claim language would not raise an issue under 35 U.S.C. 112, first paragraph written description or enablement and that the claims would be entered in an after final amendment. Supervisory examiner Weber also informed Mr. Apple that prosecution would be reopened if any issues were found under 35 U.S.C. 103. Mr. Apple will file an appropriate amendment.

Interview Summary

CLAIMS FOR DISCUSSION, NOT FOR ENTRY
Application No.: 10/672,396
Synthetic Genes

1. A synthetic gene that comprises a nucleotide sequence encoding a synthetic polyketide synthase (PKS) protein, said nucleotide sequence comprising from 10 kilobasepairs to 50 kilobasepairs encoding said PKS protein,

wherein said synthetic PKS protein has an amino acid sequence that is at least 98% identical to an amino acid sequence of a PKS protein encoded by a naturally occurring gene sequence; and

wherein the nucleotide sequence of the synthetic gene has less than 80% sequence identity to said naturally occurring gene sequence.

2. The synthetic gene of claim 1 wherein the naturally occurring gene sequence is a sequence encoding a PKS selected from the group consisting of erythromycin PKS (accession no. M63676/M63677); megalomicin PKS (accession no. AF263245); oleandomycin PKS (accession no. AF220951/L09654); pikromycin PKS (accession no. AF079138); niddamycin PKS (accession no. AF016585); tylosin PKS (accession no. AF055922); pimaricin PKS (accession no. AJ278573); pte PKS (accession no. AB070949); avermectin PKS (accession no. AB032367); oligomycin PKS (accession no. AB070940); nystatin PKS (accession no. AF263912) and amphotericin PKS (accession no. AF357202).

3. A synthetic gene encoding a module of a synthetic polyketide synthase protein ("synthetic PKS module"), wherein said synthetic gene is produced by a process comprising

a) obtaining the DNA sequence of a naturally occurring PKS gene, said DNA sequence comprising from 10 kilobasepairs to 50 kilobasepairs, wherein said naturally occurring PKS gene encodes a module of a naturally occurring PKS protein ("naturally occurring PKS module");

b) synthesizing a nucleic acid that encodes the synthetic PKS module, wherein the amino acid sequence of the synthetic PKS module is at least 98% identical to the amino acid sequence of the naturally occurring PKS module

and wherein the nucleic acid encoding synthetic PKS module has less than 80% sequence identity to the nucleotide sequence of said naturally occurring PKS gene.

Interview Summary

TABLES FROM SPECIFICATION OF Application No.: 10/672,396
SYNTHETIC GENES

TABLE 17A
SIMILARITY OF SYNTHETIC AND NATURALLY OCCURRING SEQUENCES

epothilone PKS	NATURALLY OCCURRING GENE SEQUENCE ¹		#bp	#aa	SYNTHETIC GENE SEQUENCE		
	Naturally Occurring DNA Sequence (accession #)	Naturally Occurring Polypeptide Sequence (accession #)			# aa changes compared to nat. seq.	% identity vs nat. seq. (aa)	% identity vs nat. seq. (dna)
EpoA	AF217189	AAF62880	4263	1421	4	99.72%	75%
EpoB	AF217189	AAF62881	4230	1410	2	99.86%	75%
EpoC	AF217189	AAF62882	5496	1832	4	99.78%	75%
EpoD	AF217189	AAF62883	21771	7257	15	99.79%	75%
EpoE	AF217189	AAF62884	11394	3798	8	99.79%	74%
EpoF	AF217189	AAF62885	7317	2439	5	99.79%	75%

TABLE 14A
COMPARISON OF SYNTHETIC AND NATURALLY OCCURRING SEQUENCES

	NATURALLY OCCURRING GENE SEQUENCE ¹		#bp	#aa	SYNTHETIC GENE SEQUENCE		
	Naturally Occurring DNA Sequence (accession #)	Naturally Occurring Polypeptide Sequence (accession #)			# aa changes compared to nat. seq.	% identity vs nat. seq.	% identity vs nat. seq.
DEBS1	Corrected M63676 ²	Corrected AAA26493 ¹	10632	3544	9	99.75%	76%
DEBS2	M63677	AAA26494	10701	3567	9	99.75%	76%
DEBS3	M63677	AAA26495	9510	3170	5	99.84%	76%